

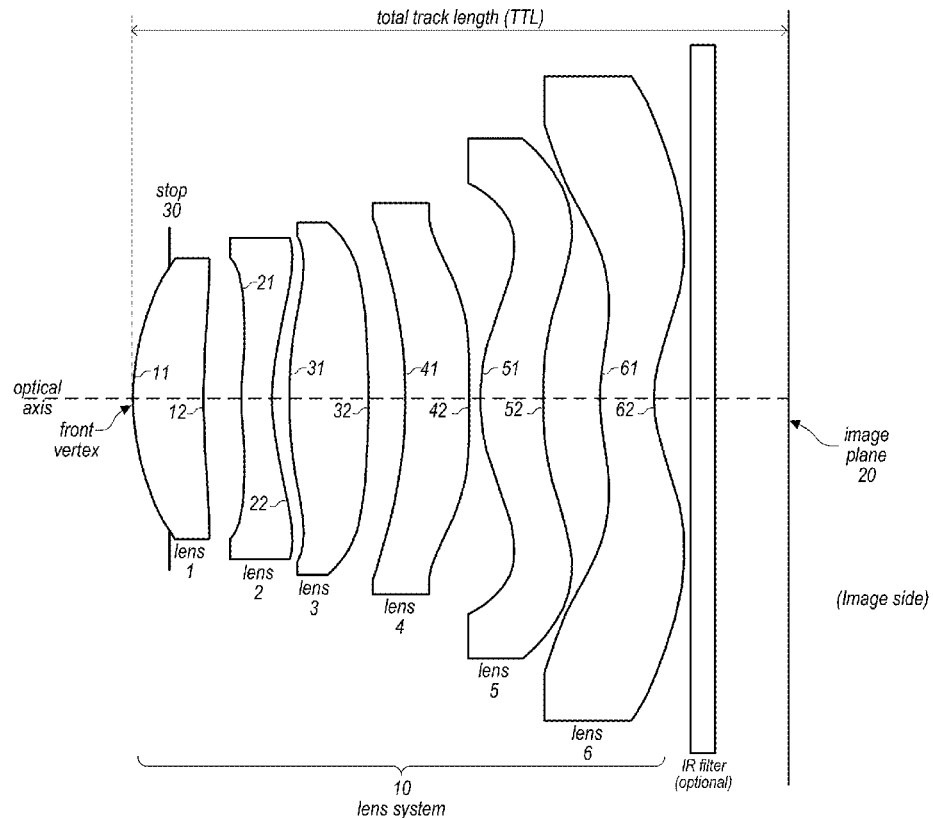


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(19) **United States**(12) **Patent Application Publication****Yao et al.**(10) **Pub. No.: US 2017/0299845 A1**(43) **Pub. Date: Oct. 19, 2017**(54) **IMAGING LENS SYSTEM**(71) Applicant: **Apple Inc.**, Cupertino, CA (US)(72) Inventors: **Yuhong Yao**, San Jose, CA (US);
Yoshikazu Shinohara, Cupertino, CA (US)(73) Assignee: **Apple Inc.**, Cupertino, CA (US)(21) Appl. No.: **15/130,735**(22) Filed: **Apr. 15, 2016****Publication Classification**(51) **Int. Cl.**
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(2013.01); **H04N 5/2254** (2013.01)(57) **ABSTRACT**

A compact, wide angle, low F-number lens system that may be used in small form factor cameras is described. The compact lens system has six lens elements, and provides high brightness with a low F-number and a wide field of view (FOV) in small form factor cameras. The shapes, materials, and arrangements of the lens elements in the lens system may be selected to correct aberrations, enabling the camera to capture high resolution, bright, high quality images at low F-numbers with a wide FOV. In addition, the shapes and arrangements of the lens elements in the lens system may reduce or eliminate a flare phenomenon.

(Object side)



(Image side)